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(56) Documents Cited

GB 2135940 A

GB 1589635 A

GB 1289361 A

GB 0937968 A

US 3931655 A

US 3566425 A

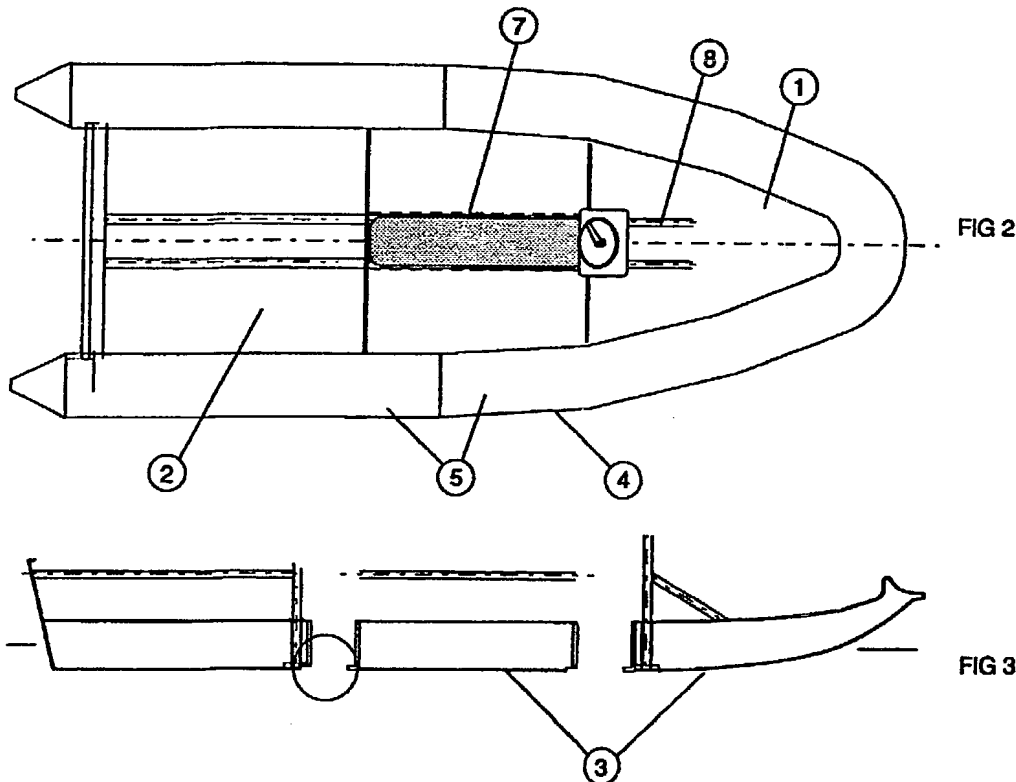
(58) Field of Search

UK CL (Edition M) B7A ADN AEH

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(54) Semi-rigid inflatable boat

(57) A rigid/inflatable boat 1 has a rigid subsection 2 which may be dismantled into two or more sub-sections 3 so that the boat may be stowed or stored in a smaller space than that which would be required by its full, functioning size. The inflatable upper structure 4 is a tubular collar which may be composed of separate sections 5. These may be secured in their assembled position by circumscribing flexible membranes. The seating/steering console arrangement 7 has an integral rigid tubular tensile/compressive structure 8 which links the various rigid subsections 3 and works to maintain their afixed interrelationship.



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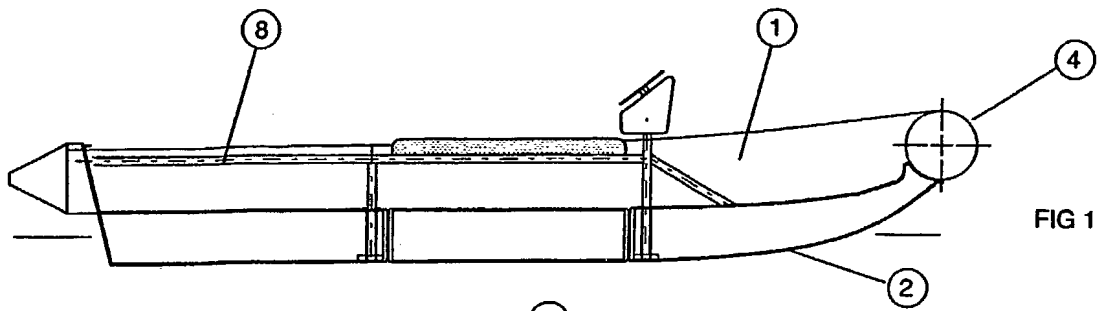


FIG 1

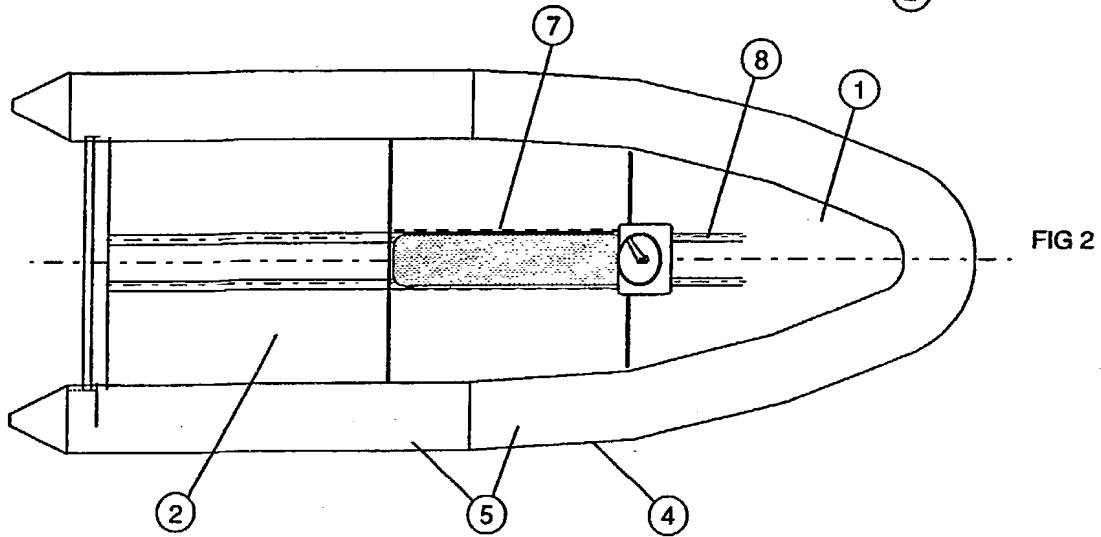


FIG 2

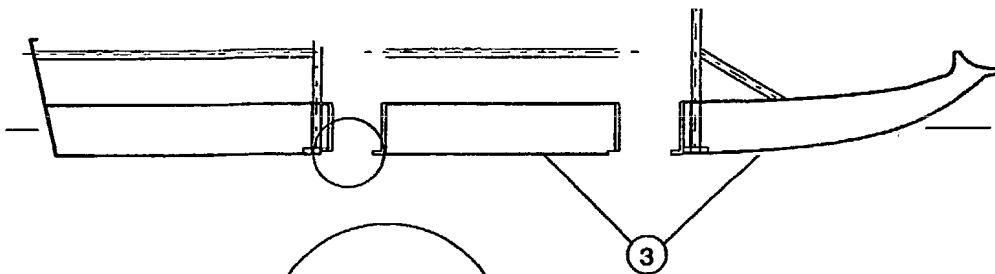


FIG 3

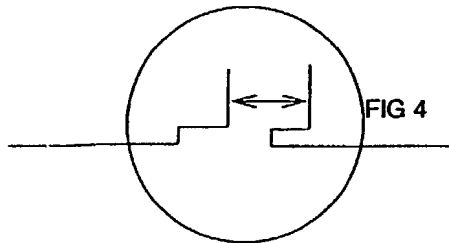


FIG 4

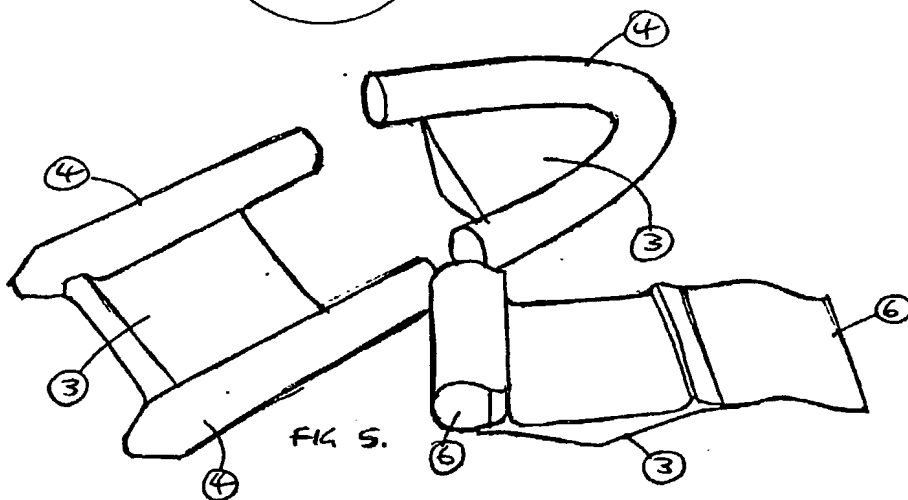


FIG 5.

A RIGID/INFLATABLE BOAT

This invention relates to a rigid-inflatable boat.

5 Rigid/Inflatable Boats (commonly called RIBs) have become very popular for reasons of weatherliness, safety, performance and ease of use. Their rigid, generally vee-section substructure produces a comfortable and weatherly ride while the inflatable collar above produces a high reserve of buoyancy and an integral fender so that the boats may be driven up against other boats, jetties and such like
10 obstacles without damage to either party.

Large rigid/inflatable boats have considerably greater scope for serious use than smaller RIBs. While small RIBs are generally used in mild conditions and can be disconcerting to use in rough seas the larger RIBs are even used as rescue boats and as commercial
15 vessels, capable of reliable and safe use in bad weather.

Larger RIBs require more stowage or storage space when not in use than smaller RIBs and users are often constrained to smaller RIBs because of stowage space considerations, for example when a RIB is used as a tender to a large motor or sailing yacht which must
20 have the facility to carry the tender onboard.

According to one aspect of the invention there is provided a rigid/inflatable boat whose rigid substructure can be dismantled into two or more components so that the requirement for stowage volume is reduced. These sub-structures may be secured together by bolts,
25 mechanical rod or wire tensioners, or by a keyway device or similar. The mating faces of the subsections may be further keyed to assist alignment and contribute to the stiffness of the assembled substructure, and each component may have a flange across the transverse lower edge of a mating surface to project beneath the
30 lower leading transverse edge of an adjacent aftward section so that the tendency of water pressure to prize apart two sections is diminished.

The inflatable collar may also be segmented such that part of the collar when deflated may remain attached to the dismantled rigid
35 bow section and another segment remain attached to the dismantled aft section or to a dismantled mid section. When inflated the homogeneity of the various collar segments may be achieved by a

flexible membrane attached along one edge to the outer edge of one of the rigid sub-sections and drawn over two adjoining ends of the inflatable collar in a circumscribing motion, and made off against an attachment further inboard on the same rigid sub-section by a tackle, strap or Velcro arrangement. This flexible membrane may be of the same material as the inflatable collar and may have rubbing strips and grab handles to integrate visually and functionally with the actual inflatable collar.

According to another aspect of the invention there may be a structure integral with the seating/steering console which links and supports the various rigid sub-sections. This may comprise interlocking tubes or interlocking components which are capable of transmitting both tensile and compressive loads to and from each extremity of their longitudinal spread. Thus the assembled boat may when considered as a longitudinal beam have greater depth between its upper and lower edges than conventional rigid/inflatable boats.

The invention is diagrammatically illustrated by way of example in the accompanying drawings in which:-

- Figure 1 shows in cutaway elevation the boat assembled for its normal use.
- Figure 2 shows in elevation the component parts separated.
- Figure 3 shows in elevation the arrangement of the abutting faces of the rigid sub-sections.
- Figure 4 shows in perspective the component parts separated with the circumscribing band released from the normally adjacent ends of the inflatable collar sections.

Referring to the drawings the rigid/inflatable boat 1 is disassembled by dismantling the seating/steering console's 7 integral rigid tubular structure 8. The inflatable collar's 4 circumscribing flexible membrane 6 is also released, and the inflatable collars 4 deflated. The bolts, mechanical tensioning devices, keyways or similar means provided to maintain the relative fixity of the rigid substructure sub-sections, are disconnected.

A boat of the invention could have its stowage bulk reduced a significant amount without compromising the advantages of safety, comfort and performance commensurate with a rigid/inflatable boat of its (assembled) size.

CLAIMS

1. A rigid/inflatable boat as claimed in Claim 1 whose rigid substructure can be dismantled into two or more components.
- 5 2. A rigid/inflatable boat whose rigid substructure sections may be secured together by bolts, mechanical rod or wire tensioners or by keyway device or similar.
3. A rigid/inflatable boat as claimed in Claims 1 and 2 whose rigid substructure sections may have mating faces that are keyed to assist
10 alignment and contribute to the stiffness of the assembled structure.
4. A rigid/inflatable boat as claimed in Claims 1, 2 and 3 whose mating surfaces may have a flange along the transverse lower aft edge to project beneath the lower leading transverse edge of an adjacent aftward section, preferably with an appropriate rebate.
- 15 5. A rigid/inflatable boat as claimed in Claim 4 whose inflatable collar may be segmented such that part of the collar when deflated may remain attached to the dismantled rigid bow sub-section and part of it to another sub-section.
6. A rigid inflatable boat as claimed in Claim 4 whose adjoining
20 inflatable collar faces may be secured by a circumscribing band of material tensioned around the mating inflatable ends and secured along both longitudinal edges to the outer edge of the RIB's rigid substructure.
7. A rigid inflatable boat as claimed in Claim 4 whose console or
25 seating unit may have integral structural components which link the sub-structure sections and support their afixed deployment by providing a tensile/compressive member substantially above the ambient upper level of the substructure section themselves.
8. A rigid/inflatable boat substantially as described herein with
30 reference to Figures 1-5 of the accompanying drawing.

Relevant Technical Fields

(i) UK Cl (Ed.M) B7A (ADN, AEH)

(ii) Int Cl (Ed.) B63B 7/06, 7/08

Databases (see below)

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii)

Search Examiner
A C HOWARD

Date of completion of Search
25 MAY 1994

Documents considered relevant
following a search in respect of
Claims :-
1-7

Categories of documents

- X:** Document indicating lack of novelty or of inventive step. **P:** Document published on or after the declared priority date but before the filing date of the present application.
- Y:** Document indicating lack of inventive step if combined with one or more other documents of the same category. **E:** Patent document published on or after, but with priority date earlier than, the filing date of the present application.
- A:** Document indicating technological background and/or state of the art. **&:** Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages		Relevant to claim(s)
X, Y	GB 2135940 A	(HENNEBUTTE) see page 2 line 109 - page 3 line 9	X: 1, 2 Y: 5, 6
Y	GB 1589635	(GALT) see bladders 4a and casings 5a, 5b	5, 6
X, Y	GB 1289361	(DUNLOP) see Figure 11 and page 3 lines 38-69	X: 1, 2 Y: 5, 6
X, Y	GB 0937968	(HUTCHINSON) see page 2 lines 39-50	X: 1, 2 Y: 5, 6
X, Y	US 3931655	(LUSCOMBE) whole document relevant	X: 1-3 Y: 5, 6
X, Y	US 3566425	(WELTY) see Figures 1, 2	X: 1-4 Y: 5, 6

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